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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

KNAUSS, SCOTT A

ART UNIT PAPER NUMBER

2874

DATE MAILED: 08/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/056,661

Applicant(s)

HIRSCH, GREGORY

Examiner

Scott A Knauss

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 7/14/03.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22-24 is/are allowed.
- 6) ☒ Claim(s) 1,4,12,13,17-19,21 and 25 is/are rejected.
- 7) ☒ Claim(s) 2-11,13-16,20,26 and 27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. The amendments and arguments in the amendment filed 7/14/03 have been entered and considered by the examiner. The previous rejection has been withdrawn, and the following new rejection is applied.

Claim Objections

2. Claims 4 and 13 are objected to because of the following informalities.

Appropriate correction is required.

Regarding claim 4, the limitation "is over" in line 3 is not grammatically correct. The limitation should most likely be changed to "over".

Regarding claim 13, the limitation "the reflection enhancing film" lacks antecedent basis since no such film was mentioned in claim 11, from which it depends. The claim should most likely depend from claim 12, which would resolve the lack of antecedent basis.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1,4,12,17 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by US 6,539,157 (Doi et al).

Regarding claim 1, Doi discloses a method of producing a capillary optic by impression in figs. 1 and 2 comprising the steps of

providing a mold #212 having an external profile figured for reflective radiation transmission along an axis;

providing at least one soft plate #204 having a surface for reflective radiation transmission (see col. 2, lines 22-26)

impressing the mold into the soft plate;

removing the mold from the soft plate to leave a vacant impression (#20a) figured for reflective radiation transmission in the soft plate along the axis, and

enclosing the vacant impression (using cover #30) to provide for a vacant impression for reflective radiation transmission along the axis of the vacant impression.

Regarding claim 4, Doi, as stated above, discloses an enclosing step including placing a cover plate #30 over the vacant impression.

Regarding claim 12, Doi further discloses coating the hollow impression #20 with a reflective material or mirror compounds (see col. 5, lines 12-16), which can be considered a reflection enhancing film.

Regarding claim 17, Doi further discloses communication the vacant impression with photons (light) through holes #35 (see col. 5, lines 44-47), such light inherently being either ultraviolet, visible, or infrared light, since such types of light are the only kinds used in optical waveguides.

Regarding claim 21, Doi discloses an optical connector including at least one soft plate #204 having a surface for reflective radiation transmission, a vacant impression #20 into the soft plate having an external profile figured for reflective radiation transmission along an axis; and, an enclosure #30 over the vacant impression to provide for radiation transmission along the axis of the vacant impression.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 13,18,19 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doi.

Regarding claim 13, Doi fails to disclose a reflection enhancing film which is a multilayer film.

Nevertheless, it is well known in the art to use reflective films comprising a plurality of layers to form mirrors and other reflective devices. Such reflective films are desirable due to their high reflectance of light. Therefore it would have been obvious to one of ordinary skill in the art to incorporate known reflective films, in particular multi-layer coatings, into the device of Doi, for the purpose of providing a highly reflective path for light to travel.

Regarding claims 18 and 19, Doi fails to specify how light originates to the vacant impression, in particular, whether optical fibers and lasers are used.

Nevertheless, it is well known in the art to communicate light into optical waveguides using both lasers and optical fibers, and it would have been obvious to one of ordinary skill in the use either lasers or optical fiber to introduce signals into the vacant impression for the purpose of communicating optical signals on the layered circuit board of Doi.

Regarding claim 25, Doi discloses laminating an optical coating (i.e. optical waveguide #20) on to a substrate layer #10, but does not disclose the coating being placed before the impressing step.

Nevertheless, since there is no stated criticality for the optical coating being placed before the impressing step, it would have been a mere matter of design choice to either impress the coating #20 before or after the coating is placed on substrate #10. Furthermore, it would have been obvious to one of ordinary skill in the art to press the coating #20 after its placement on substrate #10, since the substrate would provide a firm base for coating #20 to prevent it from being damaged by press mold #212.

Allowable Subject Matter

7. Claims 2,3,5-11,14-16,20,26 and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 2, the prior art does not teach or fairly suggest etching the mold of claim 1 out of a soft plate.

Regarding claim 3, the prior art does not teach or fairly suggest using two soft plates on either side of the mold in the method of claim 1.

Regarding claims 5,6 and 20, the prior art does not teach or fairly suggest the use of one or more wires to produce the impression in the device disclosed by Doi.

Regarding claims 7 and 8, the prior art does not teach or fairly suggest providing two plates of identical or different materials and producing symmetrical or asymmetrical imprints in the device of claim 1.

Regarding claim 9 the prior art does not teach or fairly suggest impressing using rollers in the device of claim 1.

Regarding claims 10 and 11 the prior art does not teach or fairly suggest the use of a mold having an external profile for radiation transmission, wherein the mold is an paraboloid or ellipsoid in claim 1.

Regarding claims 14-16, the prior art fails to suggest communicating the enclosed vacant impression of Doi with an X-ray tube, synchrotron radiation, or a electron microprobe instrument

Regarding claim 26 the prior art does not teach or fairly suggest the use of a plate having curvature in claim 1.

Regarding claim 27 the prior art does not teach or fairly suggest the use of a plate in claim 1 having a groove to position a mold.

8. Claim 22, and dependent claims 23 and 24 are allowed. The prior art fails to disclose a process of connecting optical fibers comprising:

Placing a vacant impression in a soft plate, the impression having an external profile figured for reflective radiation transmission along an axis;

Placing at least one optical fiber having a radiation emitting end into the vacant impression; and

Enclosing the external profile to permit radiation to travel between the fiber and the impression.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott A Knauss whose telephone number is (703) 305-5043. The examiner can normally be reached on 9-6 Monday-Friday.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (703) 308 - 4819. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0530.

Scott Knauss

Art Unit 2874

sak
July 24, 2003


HEMANG SANGHAVI
PRIMARY EXAMINER